Remarks

Reconsideration of the application is sought. Claims 1, 5-7, 11, 13 and 17-19 remain pending and new claims 27-28 are presented.

35 U.S.C. 112 objections and rejections

Claims 1 and 13 were objected to based on informalities. To the extent that the objections were not rendered moot by changes to these claims, changes as suggested by the Examiner to overcome the informalities have been accepted. The claims, and more particularly claims 1 and 13, were rejected under 35 U.S.C. 112, second paragraph, as lacking antecedent basis for a specified phrase. This rejection has been rendered moot in view of the cancellation of the subject phrase. Thus, it is believed that the claims are in compliance with the requirements of 35 U.S.C. 112.

35 U.S.C. 103 rejections

The claims were rejected under 35 U.S.C. §103 as being obvious based on Ngoc et al. (U.S. Patent No. 6,539,031; "Ngoc") and Ojard et al. (U.S. Patent No. 6,760,347; "Ojard"). It is believed that the claims are not obvious in view of these references as explained below.

MPEP §706.02(j) states: "To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)." Emphasis added. Applicants respectfully submit that the applied references, with or without combination, assuming, *arguendo*, that the combination of the applied references is proper, do not teach or suggest one or more elements of the claimed invention, as further discussed below.

For explanatory purposes, applicants discuss herein one or more differences between the applied references and the claimed invention with reference to one or more parts of the applied references. This discussion, however, is in no way meant to acquiesce in any characterization that one or more parts of the applied references correspond to the claimed invention.

Claim 1 is directed to method in which the communication protocol utilized for transmission from one transceiver to another transceiver can be automatically changed to adjust for changing conditions that adversely impact signal quality at the receiving transceiver. A transmitter at the first transceiver transmits a plurality of signals over communication channel that imparts inter symbol interference. A receiver at a second transceiver receives the symbols. A soft decision metric at the receiver determines the plurality of symbols and determines the mean symbol error probability or mean bit error probability. The second transceiver transmits to the first transceiver the signal that carries the mean error probability. A comparison is made at the first transceiver of the mean error probability with predetermined thresholds to select a communication protocol. A first communication protocol is selected upon the error probability exceeding a first threshold and a second communication protocol is selected upon the error probability exceeding a second threshold.

A significant aspect of the present invention in accordance with claim 1 is that the soft decision metric is employed at the receiver of the second transceiver to determine the mean symbol/bit error probability. As explained in more detail below, neither Ngoc nor Ojard provides such a teaching, and hence the combination of these references likewise does not contain such a teaching.

Ngoc is directed to providing adaptive countermeasures for the wireless communication of Ethernet data. It is stated in the Abstract of Ngoc that, "The broadcast device can monitor a bit error rate associated with radio frames communicated and, in response to the bit error rate, can activate the technique for altering the matter in which a radio frames are communicated." However, it was acknowledged in the Office Action that Ngoc did not show the structure of the receiver demodulation structure and other essential elements. Thus, it is clear that Ngoc does not

teach or suggest the utilization of a soft decision metric to determine the received symbols and which forms the basis for determining the mean error probability.

Ojard is directed to an off-line broadband network interface. In FIG. 7 of Ojard a demodulator 700 includes a Viterbi decoder 708, descrambler 709 and a Reed-Solomon decoder 710 connected in series to produce an output of a decoded digital packet. Thus, Ojard utilizes the Viterbi decoder 708 to provide the known function of performing a maximum likelihood sequence estimation on the received signal to make a determination of the received symbols. However, this does not teach or suggest to one of ordinary skill the art that an output from the Viterbi decoder should be utilized to determine the mean error probability associated with received signals. Nothing in FIG. 7 or its description would lead one of ordinary skill in the art to use the Viterbi decoder for other than its normal symbol decoding function. In column 15, lines 14-19, in discussing FIG. 7, it is indicated that in the preferred embodiment the Viterbi decoder as well as the Reed-Solomon decoder are optional and "may be used in the signal processing chain only when the demodulated data appears to be received in error...." Since the Viterbi decoder is optional and is only used when the demodulated data appears to be received in error, it will be apparent to one of ordinary skill the art that the error determination is not based on the Viterbi decoder or its output.

Ojard teaches away from the requirement of utilizing a soft decision metric to determine need error probability associated with recovery on an incoming signal. FIG. 13 of Ojard shows the detailed implementation of its data demodulator. The Viterbi decoder 1309 receives an input from FFE 1303 and provides an output that may be connected to symbol mapper 1306. The error monitor 1308 operates based on input from slicer 1305. The following is a quotation of the text describing FIG. 13 from Ojard.

> FIG. 13 shows the preferred implementation of data demodulator 1202, which is similar to the data demodulators shown in FIGS. 7 and 8. Data demodulator 1202 includes resampler 1301, a feed-forward equalizer 1303, a decision feedback equalizer 1304, slicer 1305, Viterbi decoder 1309, symbol mapper 1306 and descrambler 1307. Error monitor 1308 and baud phase tracker 1302 provide output monitoring and input to resampler 1301. Parameters controlling the demodulation process (shown stored in modulation profiles 711

and 811 in FIGS. 7 and 8) are shown as inputs to the various functions of the block diagram in FIG. 13. Use of DFE 1304 and Viterbi decoder 1309 in processing symbols is optional in this implementation.

Emphasis added.

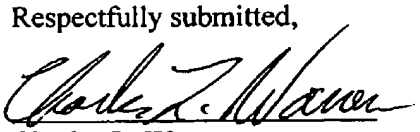
Since Ojard does not supply the required teaching and it is acknowledged that Ngoc does not provide this required teaching, it will be apparent that the combination of these two references likewise fails. Therefore, the invention in accordance with claim 1 is not rendered obvious in view of these references.

Independent apparatus claim 13 is also believed to be allowable based on similar reasons.

New dependent claims 27-28 are presented for consideration and are believed to provide additional limitations of patentable significance when considered in combination with the parent claims.

If a telephone conference would be of assistance in advancing the prosecution of this application, the Examiner is invited to call applicants' attorney at the indicated telephone number.

Respectfully submitted,



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Dated: April 7, 2005

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